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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FH981207PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP98/08475	International filing date (*day/month/year*) 28 December 1998 (28.12.98)	Priority date (*day/month/year*)
International Patent Classification (IPC) or national classification and IPC H03M 7/40		
Applicant FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 14 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
24 January 2000 (24.01.00)	26 March 2001 (26.03.2001)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP98/08475

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed

☒ the description:

pages 1-4,6-27, as originally filed

pages _____, filed with the demand

pages 5,5a-5b, filed with the letter of 23 January 2001 (23.01.2001)

☒ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages 1-26, filed with the letter of 21 March 2001 (21.03.2001)

☒ the drawings:

pages 1/1, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☐ the sequence listing part of the description:

pages _____, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-26	YES
	Claims		NO
Inventive step (IS)	Claims	1-26	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims		NO

2. Citations and explanations

1. Of the documents cited in the search report, this report makes reference to the following:

D1: EP-A-0 717 503 (FRAUNHOFER GESELLSCHAFT) 19 June 1996 (1996-06-19)
D2: EP-A-0 492 537 (MATSUSHITA ELECTRIC) 1 July 1992 (1992-07-01).

2. The present application meets the requirements of PCT Article 33(3), since the subject matter of Claims 1 to 26 involves an inventive step.

2.1 D1 discloses a method for coding an audio signal (D1, abstract, first sentence). Furthermore, D1 discloses step (a) of Claim 1, i.e. the transformation of time-discrete scan values into the frequency range (abstract). The transformed scan values are encoded with code words of variable length (abstract). A grid is determined which has equidistant grid points (D1, page 3, lines 55-57). The description of D1 can be understood as defining an arrangement of individual code words in a grid. No "preferred" or "priority" code words are selected there. Instead, all code words are treated equally, which is explained by the

example in the five tables on page 3. The grid is configured such that at least the first (most important) bits of each code word are aligned with a grid point.

Figure 1 does not provide any information concerning the selection of code words which begin at grid points. In particular, Figure 1 does not show, in contrast to the subject matter of Claim 1, the selection of psychoacoustically significant/priority code words. Psychoacoustic criteria are mentioned in D1 (page 4, lines 39-40 and page 5, lines 22-25), but not in conjunction with the selection of special code words which are aligned along the grid points.

2.2 The technical effect associated with the selection of priority code words is that of fewer errors in the coding (see also application, page 5, fourth paragraph).

2.3 D2 relates to the coding of audio information (D2, page 2, lines 5-6). D2 also shows, in addition to the transformation (page 3, line 9) according to method step (a), the feature of method step (b) (see D2, Figure 1: 6). According to method step (c), a grid with equidistant grid points is determined (D2, Figure 3B: Beginning of the record groups). Although D2 does not directly mention the determination of priority code words, according to the sorting algorithm used (see Figure 2), coefficients of the lowest frequency are arranged beginning with the grid points (Figure 3B). This corresponds to the selection of priority code words according to the criteria stipulated by Claim 5 of the present application. D2 does not show that the distance of the grid points depends on the code table used. Furthermore,

according to D2, only one (significant) spectral value of a group of spectral values is aligned along grid points and not several values as defined in the independent claims of the application.

2.4 The subject matter of Claim 1 is therefore not obvious from the documents cited in the search report.

2.5 The remaining independent Claims 21, 23 and 25, which relate to the corresponding coding device, decoding method and decoding device, also involve an inventive step.